

HUGHES

HUGHES AIRCRAFT COMPANY

*All about engineering
and computers and you and
electronics at Hughes
in Southern California.*

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Southern California Map—
Facilities and Major Universities

About You & Us

We're Hughes—over fifty-five thousand people strong, a third of us engineers and scientists. We work in more than 40 different divisions and subsidiaries of Hughes in Southern California, in Arizona, and worldwide. And we're still growing.

You and Hughes can do great things for each other. Your training and ability can earn you many different kinds of rewards, if you can help us keep innovating, keep showing the way, in the field where we excel:

High-technology electronics.

We offer you the best of both: the creative atmosphere, high visibility, and upward mobility of small working teams...plus the diversity, resources, stability, and benefits that only a large company can give you.

Like people in a small young firm, Hughes people are free from tradition-bound restrictions; free to say, "Okay, what's next?" And, also as in a small company, their individual contributions can win them all kinds of recognition.

But only a major corporation can offer you the stability that comes from having a multi-billion-dollar backlog of work to complete—more than 1,500 diversified projects. Only a major corporation can offer you so many different assignments to work on, technologies to work with, and top jobs to work toward.

As you read on, we hope you'll picture yourself at Hughes, enjoying the best of both: the job you'd get, the most satisfaction out of doing... and big rewards for doing it.

If Hughes Aircraft doesn't make aircraft, what does it do?

We're called Hughes Aircraft Company, but our middle name is merely the one we were christened with, back in 1932.

We design and build high-technology electronics systems, equipment, and components for space, airborne, ground-based, shipboard, and undersea applications. Our product lines include:

- Large-scale software systems
- Space exploration and satellite communication systems
- Guided missiles and associated weapon-control systems
- Civil and military command, control, and information-distribution systems
- Automatic test and industrial automation systems
- Radar, sonar, TV, infrared, and laser sensors and electronic warfare equipment
- RF, microwave, electro-optical, and multiplex-wire communications equipment
- Computers, signal processors, and display and control consoles
- Electro-optical sensing, storage, and display components
- Traveling-wave tubes and solid-state microwave and millimeter-wave components
- Monolithic and hybrid microcircuits and standard electronic modules
- Quartz crystal frequency-control and digital timing devices
- Electrical and fiber-optics connectors and interconnection assemblies

We also supply field services; specifically, installation, modification, maintenance, and support of avionics and electronic equipment, as well as site activation and management.

Hughes Organizations

Details on their activities are in the Hughes binder in your engineering or placement office library.

Electro-Optical & Data Systems

Ground Systems

Industrial Electronics

Missile Systems

Radar Systems

Space & Communications

Support Systems

Research Laboratories

Santa Barbara Research Center
(A wholly-owned subsidiary)



Basic & Applied Research

In its ability, and its commitment, to devote enormous human and material resources to research, Hughes is unique among major electronics firms. On joining our technical staff, you might receive a research assignment on any of three levels within the Company.

Literally thousands of men and women in our seven operating groups carry on R&D work related directly to their product lines. Within each group, a more speculative effort, concentrating on ideas that show promise of longer-term benefits, is the responsibility of a research branch. (Space & Communications has its Technology Division, for

chemistry to advances in liquid crystals, batteries, and resists; plus dozens of projects in the *physical electronics* laboratory, and *theoretical* studies of electronic wave propagation, solid-state physics, quantum electronics, and signal processing.

By now, Malibu's discoveries in some of those areas have been passed along to appropriate Hughes divisions for development.

It takes an inquiring mind. "And what else?" you ask.

To become one of the physicists or other scientists at Hughes Research Laboratories, you need your Ph.D. About half of those selected each year come directly from graduate school and move into our offices overlooking the ocean, into facilities that offer the most advanced of scientific equipment, and into collaboration with some of the most searching minds in industry, assisted by the most highly skilled technicians anywhere.

Of those hired for the operating groups' research arms directly from graduate schools, about half hold Ph.D. degrees and half have master's degrees — in engineering, chemistry, physics, or computer science.

Every engineer and scientist that joins Hughes is expected to have an interest and a capability in research, product improvement, and new-

example, and Industrial Electronics has three Research Centers.) And the most "far out" and far-ahead investigations of all are carried forward by the several hundred members of our corporate Research Laboratories in Malibu.

The two principal thrusts of the Research Laboratories' work in the late '70's involved extending the performance of integrated circuits and further study of multistage solid-state power-combiner amplifiers. The integrated-circuit work included both gallium arsenide and silicon-MOS technology; the higher-performance devices and circuits were fabricated by using electron-beam lithography.

A few other major areas of inquiry were *chemical physics* research into III-V epitaxial materials, charge-coupled devices, and MOS devices; *optical physics* research in fiber optics and laser photochemistry; *exploratory* studies of such diverse matters as scene analysis and applications of organic



product development. It is that "R&D attitude" that helps keep us out in front in advancing technology.

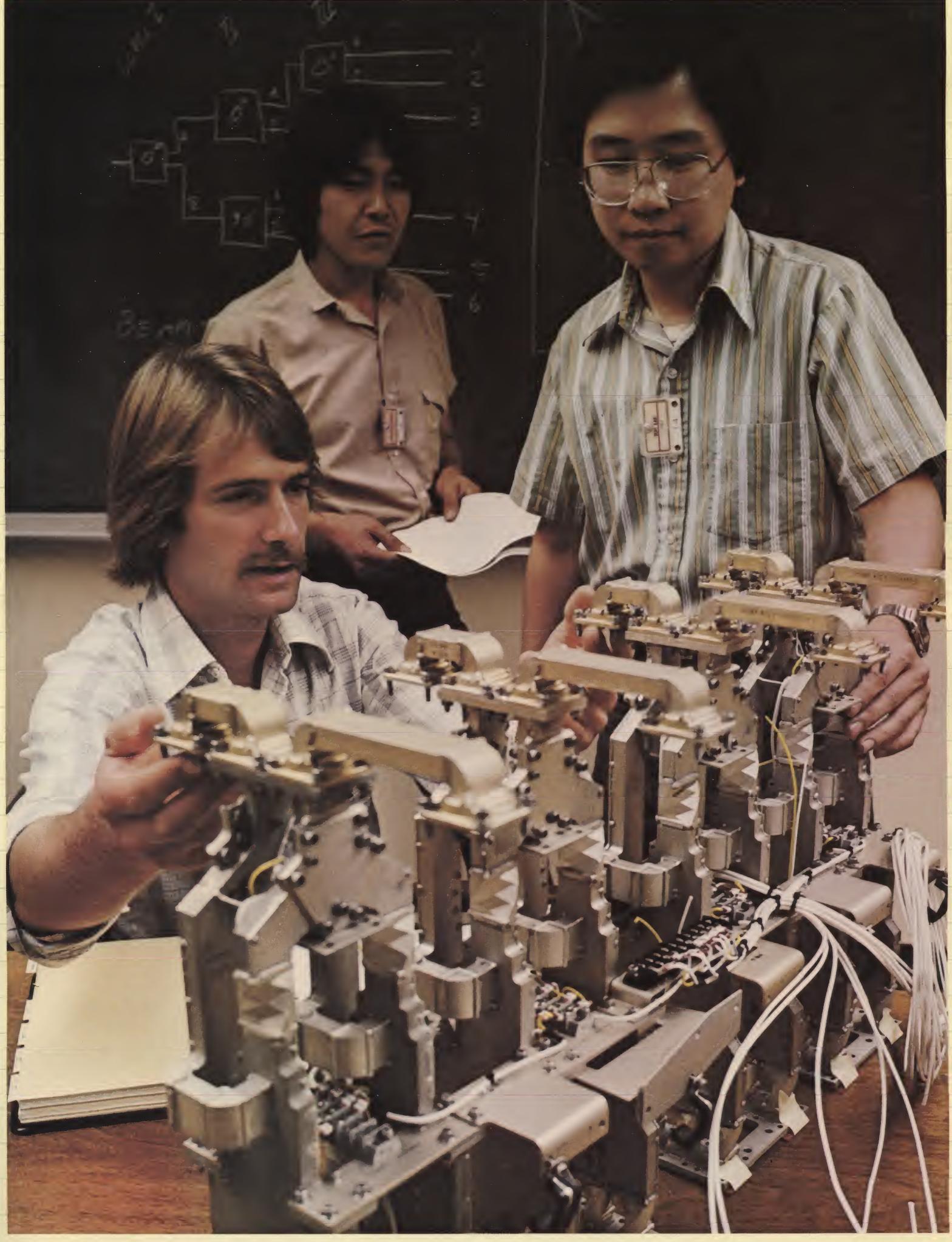
So it has been Hughes people whose research on traveling-wave tubes advanced their application in radar and space communications by years.

And whose achievements in the generation and control of ion beams led to development of an ion engine to propel spacecraft and maintain satellites in their proper attitude.

And whose inquiries into computer-controlled electron-beam fabrication introduced a whole new era in microminiaturization.

Hughes people. Come join them. You'll have a chance to look into part of a wider range of sciences and technologies than you ever thought one company could explore.





Systems Engineering & Analysis

This is the heart of systems engineering: synthesis of different disciplines to achieve performance and reliability in an overall design.

In Space & Communications at Hughes, for instance, it involves designing not only a spacecraft for a specific mission (communications, exploring a planet, or reporting on our own planet's resources or weather), but also the launch vehicle, ground control, and information retrieval.

Structures, thermodynamics, propulsion, attitude control, communications, solar power, and the information sciences come together in a single system, thanks to systems engineering.

Where do you start?

When the mission and its calendar and cost limits have been specified in detail, somebody has to design the physical entity — to plan the architecture of the system. You may be called on to participate in concept studies. How much can be accomplished on the tight schedule? Within the tight budget?

Out of concept studies grows a preliminary design. Your assignment may be to work on that. Or on the resulting design definition — drawing up detailed specs. And at every step, engineers test and evaluate. We can't afford to take chances with any customer's money at \$50 million a shot.



Once systems design and then systems manufacturing are complete, mission operations takes over to continue design evaluation and reliability testing and modifications through a successful test, before the system is finally handed over to a customer.

Guidance: of missiles and careers.

Take another example. You studied control theory in college. You have landed a job in guidance and control at Hughes Missile Systems. What kind of responsibilities can you realistically expect?

Your first assignment may be to participate in designing one of the key elements of a missile: the autopilot and control system that maneuvers it, to its target.

You will interact daily with aerodynamicists, with guidance specialists who design seekers that collect target information, with mechanical engineers who provide data regarding the airframe, and with propulsion experts and other technical specialists. With mathematicians, physicists, engineers.

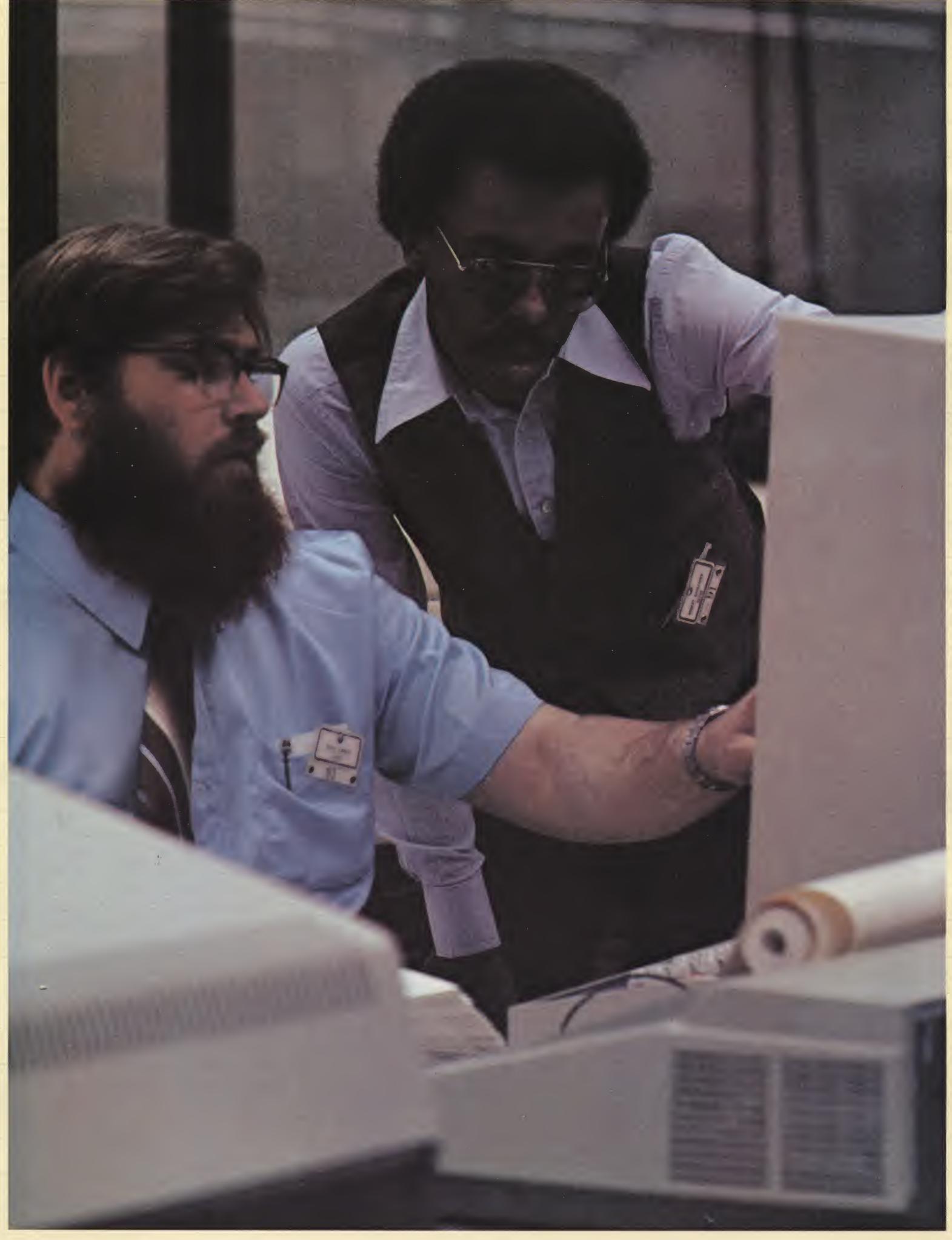
Above all, you will work on a challenging problem, have meaningful responsibilities, and associate with the best missile designers in the world.

In the process of performing your specialized assignment, you will gain valuable insights into other technologies, which will enable you to do your job better — and to do a bigger job next time. It is this process of broadening your range of knowledge that leads to increased responsibility.

We welcome many just-graduated EE's and computer scientists and ME's into our systems laboratories to begin designing components and subsystems. Show your ability for two or three years and you may move into supervision or systems analysis and systems integration.

Or, if you demonstrate some business orientation along with your technical know-how, you may become a project manager, concentrating on the hard realities of helping people accomplish the utmost within the inflexible limits of time and money.

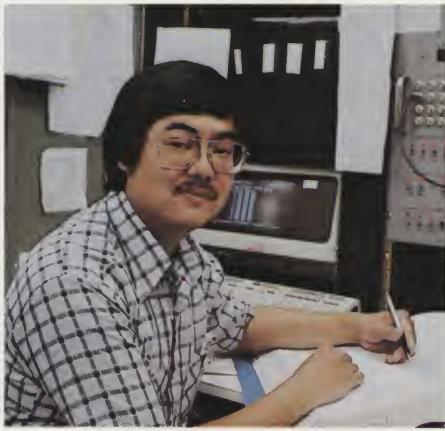
Two or three years from bachelor's degree to systems responsibility. It doesn't happen many places. It happens often at Hughes. We're talking about lots and lots of actual cases. A couple of years from now, we'd like to be bragging about your case.



Software Engineering

There was a time when hardware was king and software its slave. Today, superior software gives us much of our hard competitive edge.

As the systems we build become ever more sophisticated, software excellence grows more crucial to component and systems design. As analog technology gives way ever more to digital technology, software sinks its roots deeper into every phase of the design process. To meet our systems requirements, we need more and better software specialists.



Of course, if you are about to graduate from a computer science or information science curriculum, you'll be hearing from other companies, too, about their need. But the facts about Hughes make it a more attractive place to launch and develop a career:

Larger variety of projects to work on, more security in the form of our enormous backlog of assignments, higher visibility in small-group working teams, the premium we place on creativity, the high technology we deal in every day, our variety of Southern California locations — an unbeatable combination.

Join us, and we'll make you a member of a project group with responsibility for detail design, coding, and testing of one or more modules of a program. When the designer details the problem in terms of structured design, you'll lay out the design using hierarchical input, processing, and output documentation or structural design

techniques; code each module in an HOL such as JOVIAL, CMS-2, FORTRAN, or the new DOD language ADA based on PASCAL; and test the module parametrically on the target computer or by the use of special simulators.

You'll get technical supervision in the form of design and code walk-throughs, backed up by a well documented set of standards and the design specs. You'll find the designers on your team receptive to your ideas for making the programming job easier and the hardware more efficient.

Whether you go to work in software engineering design, implementation, or integration of modules into a complete system, you'll be aware — and your supervisors will be aware — how essential your software skills are to our overall operation. That is most notably true in the development of embedded computer systems, a Hughes specialty, in which real-time programming is a full partner to hardware engineering in systems development.

Growth of our engineers and programmers is vital to growth of our company.

Your progress at Hughes will be formally reviewed with you at least once each year. You'll be encouraged to continue your education by participating in our fellowship program, in-

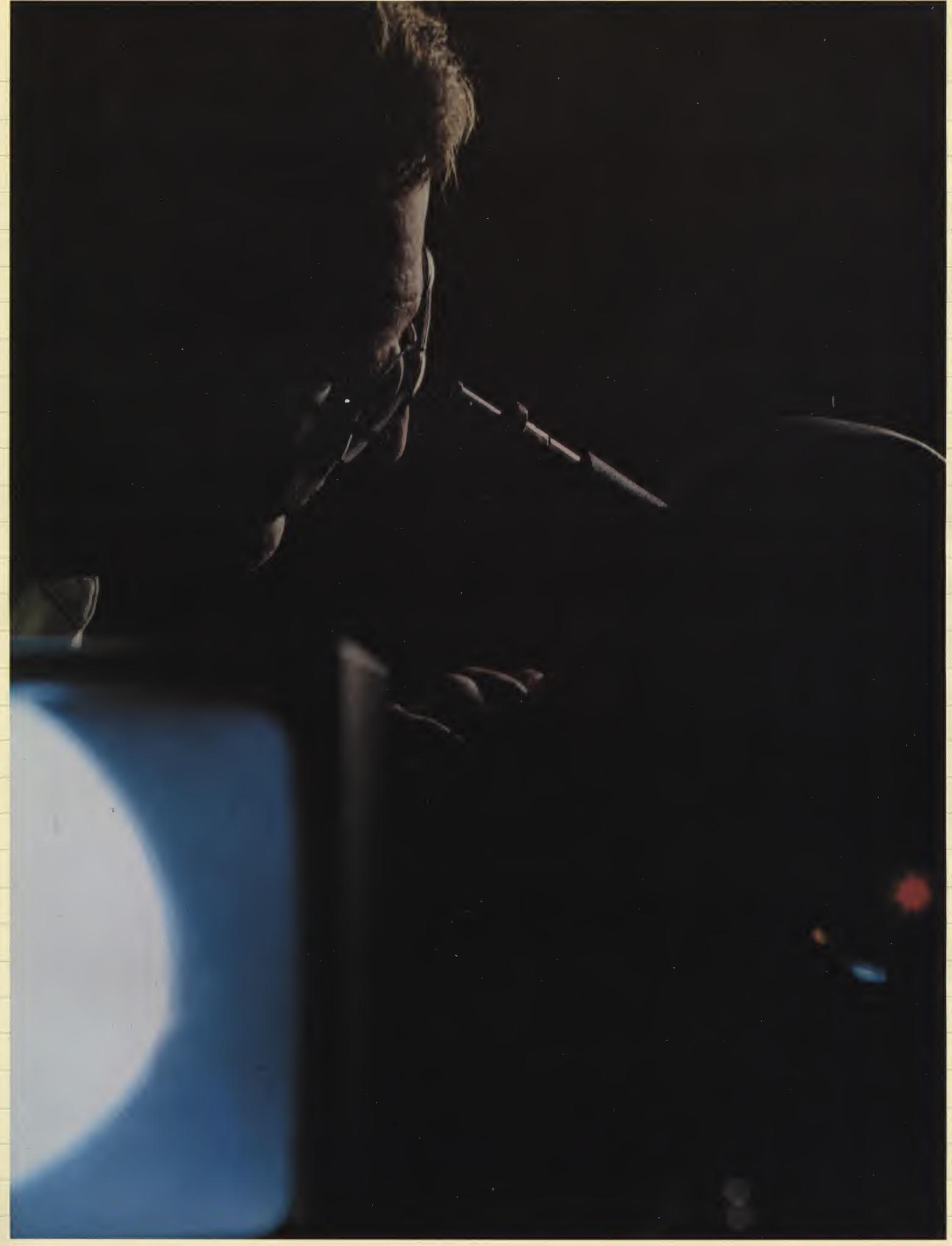


house Advanced Technical Education Programs, and technical seminars especially for our software engineers and programmers.

Without our thousands of software specialists, the Pioneer orbiter would still be a hundred million miles from Venus, F-14, F-15, and F-18 aircraft would be denied the advantage of their highly advanced frequency-scanning 3-D radar. And NATO, Switzerland, Spain, Japan and the U.K. would be without the air defense systems that provide vital electronic data in a split second.

To say your special contribution to our future will be highly valued is an understatement. Hughes is the place for the software specialist who would be king.





Design & Development

To make a significant contribution every day, to keep learning all the while, to develop your specialty beyond the present limits of knowledge—that opportunity is open to new graduates, in design and development work at Hughes.

You will be expected to become involved in every aspect of creating new devices and components. As a member of a small team (five to ten members, usually), each new engineer or scientist works with an experienced supervisor and some senior people.

Your contribution will count, and it will show.

Our very extensive capabilities in computer-aided design (CAD) will be at your service. We wouldn't expect anybody to design a 14-layer circuit board, for instance, without plenty of computer assistance. And, of course, components like that don't come off the shelf. As a company working in new and unexplored electronics territory, we must count on our own people to develop most of the products we need to fulfill our assignments. And to develop the required manufacturing capability. And to develop the attendant test equipment.

For us, learning never ends. And for you?

Suppose you come to work here, with your degree in engineering, physics, or computer science in hand.



While you are learning from your daily contact with the senior members of your group and others, you can also be learning from a local university, and earning an advanced degree. This booklet's pages on Educational Programs tell how.

On a timetable that your own talent and hard work will create, you can move directly into design of subsystems and complete systems—making many people's work all work together.

Hughes is a technology-oriented company managed by engineers. Its investment in computers and other tools is enormous. Its future depends on its engineers' and scientists' future discoveries. At Hughes, you may work on a solid-state radar transmitter, or lasers, or digital processing, or sonar—or whatever comes out of our research to replace them.

Every day, we investigate the future and apply what we learn. If that is the sort of work you would like to do, let us know.





Production Engineering

All our advanced technology and sophisticated design capability wouldn't mean much if we couldn't deliver on time, at a cost our customer can afford.

So a vital factor in the design of any system is: How is this previously unknown product going to be produced and tested? The answers are up to the production engineer and, within



that category, the more specialized test engineer.

This work may be the most solid foundation of all for an engineering career with unlimited upward mobility. The best chance of all to gain experience in various disciplines and an appreciation of what it takes to turn bright ideas into working realities.

Every production engineer is at once a designer, a researcher, a technical writer, a supervisor, a hands-on problem-solver, and most of all a producer.

Right now, Hughes production engineers are designing and developing digital, analog, optical, mechanical, and environmental production test equipment; advancing the state of the art of computer-aided manufacturing; and shrinking the time, the cost, and the number of changes necessary to get from product design to product delivery.

What does it take?

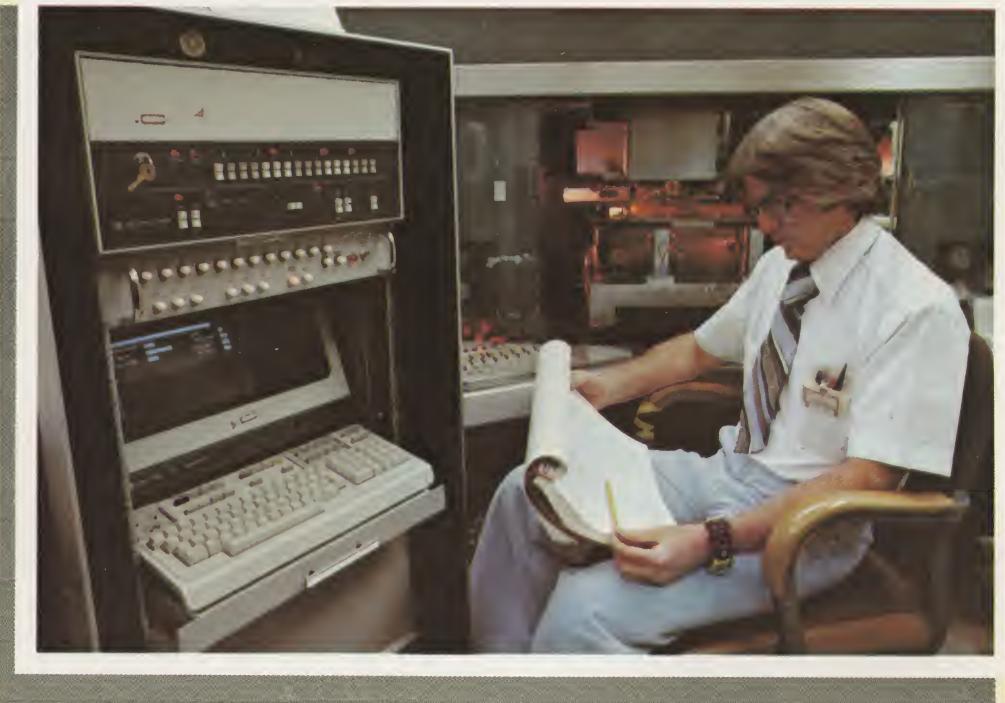
Good production engineers come from a wide variety of backgrounds. They include engineering, science and technology majors.

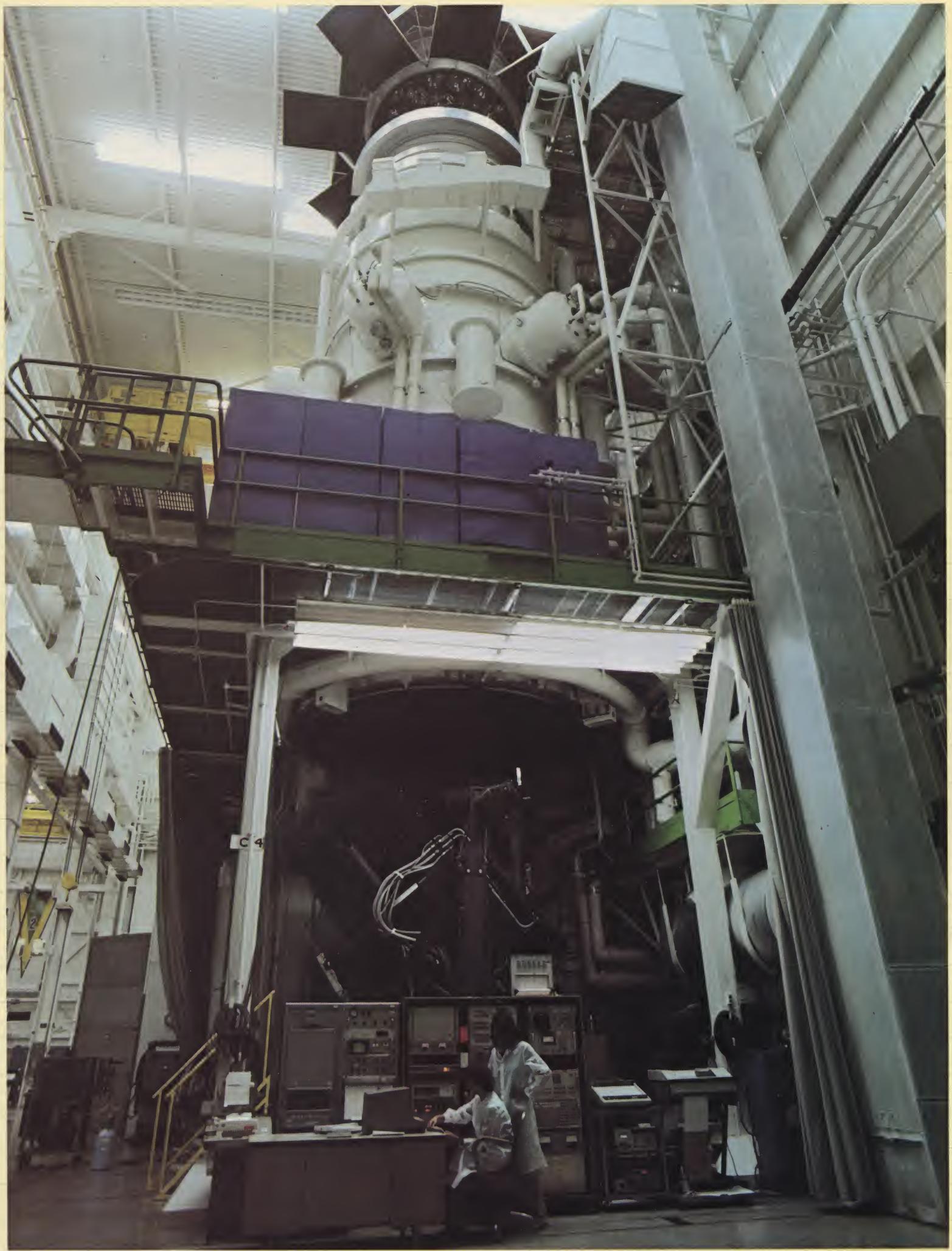
What they have in common is their practicality and their everlasting interest in matters scientific and mechanical.



What they find on the job is a new respect from management for their down-to-earth contributions in the vital areas of cost, scheduling, and quality. Plus ample opportunity to become part of that management.

Interested?





Engineering Support Services

One of the best ways to get your feet wet at Hughes may be to work thousands of miles away, on an aircraft carrier in the middle of the Atlantic or at a U.S. Air Force base overseas.

One of the reasons customers (including our own armed services) come to Hughes is that we not only build unequalled hardware, but also provide super systems support anywhere our hardware is used.

We assign field engineers to our customers' installations to support and maintain Hughes electronic systems and equipment. When you are a field engineer, you get involved in installing the system, preparing instructions and training operators, and providing on-site technical assistance that could take you from Southern California to almost anywhere around the globe.

You can play an important part in designing and developing simulators, as well as automated procedures to test and maintain radar, laser and microwave systems. You can learn—and



teach—ways to check and repair hardware ranging from the F/A-18 radar system to air defense systems that form protective rings around much of the free world.

bit more, even when your supervisor is not looking over your shoulder, but is half a world away, at Hughes in Southern California.

Train in Southern California. Work anywhere in the world.

Before you take up your assignment in the field, you may train in our microelectronics laboratory, one of the world's most advanced. You may work with half a dozen kinds of computers, including state-of-the-art microcomputers. You're sure to get a thorough indoctrination before you get your first field assignment.

Then you'll be a lot more on your own than even most other Hughes people.

And after that first assignment and a second and maybe a third, you'll say—as do many of our present systems designers who started out in support services—that this is one of the most valuable kinds of experience an eager engineer could have. Field support engineering with Hughes can be a giant leap—and yet a comfortable one—from campus to a supervisory level in our Company.

What does it take to get started? Your BS degree in electrical engineering, physics, or computer science. Plus the character to do your job and a



About Computers



When you are making a career decision, computers must be a factor in your calculations. It's not a matter of buzz-words or of only casual interest. You have every reason to ask these questions:

What are this company's computer capabilities? For advanced projects, can I get the computer help I'll need? Is there enough of a computer facility to go around? Can I get access?

We wouldn't have brought the subject up if we didn't have a great answer—a huge amount of data-processing capability to put at your service.

Electronic help for electronics experts.

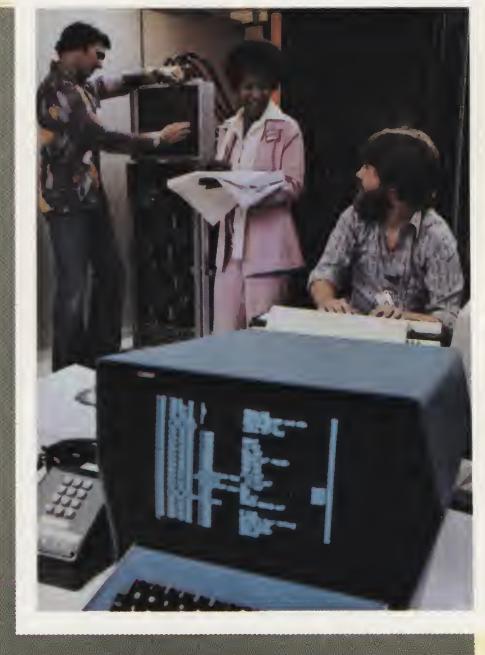
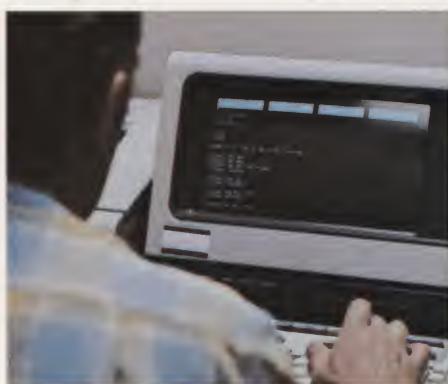
Item: our Radar Systems Group alone, in one building alone, has—honest—138 computers. They range from Hewlett Packard minis to IBM maxis.

The building is wired to handle 150 terminals on each of its several floors. Switching equipment connects as many as 1,500 terminals to any one of a dozen even larger computers at Hughes facilities in three other communities.

And in the near future, the same building's computer center will have—are you ready?—105 billion bytes' worth of memory; capacity to store a million drawings, each a yard square; and the ability to retrieve any specific piece of information within ten seconds.

Computer capability on a comparable scale is readily available to members of other Hughes groups.

Anybody on the Hughes technical staff who needs information has instant access to it.



Educational Programs

Our success is built on the achievements of our technical staff members. So we encourage and support their continued education.

The variety of educational opportunities at Hughes is almost as great as the variety of projects you can work on here. And these are not token or figure-head plans. Each year, over half of all our degreed engineers complete at least one Advanced Technical Educational Program. Each year, several hundred Hughes people carry on graduate-level studies with the help of fellowships awarded by the Company.

These are our major educational programs:

Fellowships.

You may apply for a stipend plus full academic expenses for study at an approved university for a nine-month academic year (renewable). If you are offered a fellowship and you accept, you will work full-time at Hughes for two to three months before you begin study.

Hughes Master's Fellowships: If you hold—or expect to receive in a few months—a bachelor's degree in an appropriate field of engineering, mathematics, physics, or computer science from a school accredited by the Engineers' Council for Professional Development, you may apply. "Fellows," male and female, are expected to complete the requirements for their Master of Science degrees in one year of full-time study or two years of work and study.

Hughes Engineer Fellowships: If you have, or are about to receive, a master's degree in an appropriate field of engineering, you may apply for one of these fellowships to work toward the engineer degree. This program is appropriate if you want to study beyond your master's degree, but your career objectives do not require a Ph.D. program with its emphasis on specialized research. The engineer degree program is usually completed in a year of full study or two or three years of combined work and study.



Hughes Doctoral Fellowships: Outstanding applicants receiving master's degrees in appropriate fields of engineering, mathematics, physics, or computer science may apply. Those who have already begun studies beyond the master's degree will get special consideration. Holders of doctoral fellowships are expected to receive their Ph.D. degrees after two or three years of work-study plus a year of full study for their dissertations, or three years of full-time study. Applications close in February.

For more information, or a fellowship application packet with full instructions for applying, write us.

Other programs for continuing your education.

Interactive Instructional Television: Engineers in our largest divisions can attend live classes at the School of Engineering of the University of Southern California—without charge and without having to leave our facilities. Many of these classes on television are in electrical engineering; others cover computer science and mechanical engineering subjects.

Advanced Technical Education Program: These free graduate-level programs in technologies directly related to our product lines are conducted in our laboratories, manufacturing facilities, and conference rooms immediately after the working day.

Management Development Program: Outside consultants and Hughes personnel conduct professional workshops and seminars, both in our plants and at local conference facilities, to help you increase your supervisory and management effectiveness at no cost to you.

Reimbursement for after-hours study: The Company pays in full for tuition, lab fees, and books when you complete a job-related or approved degree-directed course at any of many local colleges and universities.



Engineering Rotation Program

Few new graduates really know what they want to specialize in. How about you?

Even fewer know what all the technical jobs in electronics entail—especially at Hughes, with its wide, wide range of products and services.

Solution: rotation.

Our Engineering Rotation Program leads to informed career choices. And the "electronics overview" you get can be a lifelong benefit.

If you qualify, you will work in a two-year sequence of either three or four assignments chosen especially for you. It is in your interest and ours for you to find the career position you have the greatest aptitude and affinity for—the job you'll do best in.

Most of our facilities in Greater Los Angeles are close enough to one another to minimize the need for household moves, if you rotate to more than one location during your individual program.

Many men and women in the rotation program are working part-time at Hughes while they study for advanced degrees. Others are working full-time and taking university courses after hours.

Our engineering rotation and master's fellowship programs, especially, complement each other well. By the time you complete your degree requirements, you will have chosen a career assignment.

First step in applying for our Engineering Rotation Program: schedule an interview with a Hughes representative through your school's placement office.



Benefits of working at Hughes

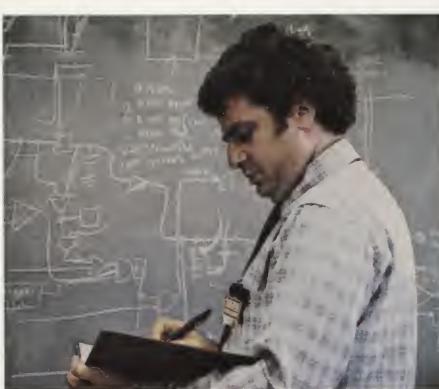
The benefits of being at Hughes don't end when the day's work ends. We offer you a package of programs you can't afford to be without.

Even if you work as little as 20 hours a week at Hughes while you participate in one of the Company's educational programs, you will be eligible for these benefits we provide for full-time employees:

- Company-paid medical, dental and vision care insurance
- Company-paid life insurance
- Pay during jury duty and active military service, as well as during vacations, holidays, and sick leave
- Liberal retirement plan
- Company-contributory savings plan
- Low-cost income insurance
- Excellent relocation benefits, including professional assistance
- One of the world's largest credit unions, with savings and loan services at special interest rates.

In addition, you may dine in our cafeterias at most facilities; buy discount tickets for theater and sporting events; join travel and recreational programs; take part in Company dance classes, hobby clubs, and team and individual sports; and even get help in filling out your income-tax returns.

If we have overlooked anything that might help make you happy at Hughes, please let us know.





Southern California Living

Imagine a major U.S. metropolitan area that is:

- Seventeenth in cost of living—less expensive than New York, Boston, San Francisco, Buffalo, Milwaukee, Washington, Minneapolis, Hartford, Philadelphia, Detroit, Cleveland, Chicago, Baltimore, and Seattle, much less Anchorage and Honolulu—in the U.S. Bureau of Labor Statistics 1978 survey of 31 major cities (average annual budget for a middle-income family of four: NY \$21,587; LA \$17,722)
- Second only to Phoenix for the most sunny days and fewest cloudy days per year among 31 major cities listed in *Comparative Climatic Data Through 1977*
- Second only to Miami when it comes to winter warmth (average January daily high and nightly low temperatures, 1948-1977), according to the same publication
- Second only to Chicago in “overall livability” (career opportunities, culture, recreation, and more), in a survey reported in the 1979 *AMBA Executives Employment Guide*, covering 36 major cities and suburbs.

Enough of this suspense. The envelope, please. And the winner is... Los Angeles!

Cost of living? Or enjoyment of living?

When people say “Los Angeles,” they usually mean not “merely” the 400-plus square miles of diversity inside the city limits, but Greater Los Angeles (generally Los Angeles County and Orange County). The metropolitan area ranges from more than 100 miles of beaches to peaks over 10,000 feet high.

This work-and-playground encompasses desert, beach, and foothill communities, downtown big-city neighborhoods, suburban apartment blocks, secluded homes a block from famous boulevards, and areas where five-acre horse ranches are typical.

Here, in the suburbs and near Los Angeles International Airport, are Hughes headquarters and most Company facilities. (Other locations are 90

miles up the coast near Santa Barbara, 90 miles down the coast in Carlsbad, and inland at Tucson, Arizona.)

So this Greater Los Angeles area is where most Hughes people live, in their choice of a score of different life-styles. The great majority hope they’ll never have to live anywhere else.

Maybe you have heard the price of homes here is high. It is. But home-ownership is Southern Californians’ Number One hedge against inflation; houses here have traditionally appreciated well. And...

Look at the government’s Cost of Living Index figures for all housing costs combined. Consider not just mortgage payments, but low fuel costs, rents, furnishings, and maintenance—the *whole* cost of shelter. And the surprising fact is this:

Housing costs increased here less than nationally from 1967 to March 1979. Los Angeles and Orange Counties, up 111.7%. U.S. up 117.6%!

And you can save on a lot more than home-heating here. No heavy winter wardrobe, no tire chains or snow tires, unless you choose to drive an hour or two up into ski country. Lower year-round prices for fresh fruits and vegetables. Great variety of free entertainment and recreation. Come and see.

You’ve heard the jokes about smog. We have it sometimes. Most cities do. Because our regional air-quality standards are tougher than any elsewhere in the country, some summer days we are asked to form voluntary carpools and avoid unnecessary driving (good advice any time). The fact is, Merrill Lynch—bullish on this area as well as the rest of America—says smog is Southern California’s “most over-publicized” aberration. Enough said.

Look for culture and you find it.

Rams, Lakers, Dodgers, Angels, Kings, Surf, Aztecs, Bruins, Trojans—the Los Angeles area is rightly known as the sports capital of the world.

Motion pictures, television, and recording all call this their home, and this is where their stars most often appear “live” as well.

Year-round golf and tennis, surfing, hunting, fishing, riding, boating—Southern California is famed around the world for bountiful recreation.

But what about hard-core *culture*?

Well, where would you expect to find the following?

- World-acclaimed orchestra formerly conducted by Zubin Mehta and now by Carlo Maria Giulini (Los Angeles Philharmonic). Incidentally, Orange County has a highly regarded philharmonic orchestra of its own
- Wealthiest museum in the world (J. Paul Getty Museum south of Malibu)
- Center for literary research which also houses an outstanding art collection including “The Blue Boy” and “Pinkie” (Huntington Library, Art Gallery, and Botanical Gardens in San Marino adjacent to Pasadena)
- World’s largest and best-known natural outdoor concert amphitheater (Hollywood Bowl)
- Largest art museum west of the Mississippi, with a garden of Rodin sculpture and an outstanding permanent collection (Los Angeles County Museum of Art)
- Three-theater Civic Center complex which may offer on a typical evening a concert or opera, a musical play, and an experimental drama followed by discussion between audience and cast (Music Center)
- And a whole lot more. For instance, each Sunday’s edition of the *Los Angeles Times*, one of the world’s great newspapers, gives schedules of at least 20 larger and 40 smaller stage theaters.

If anybody tells you things in Southern California happen in too many different places for anybody to take full advantage of them all, that may well be true.

But if anybody says those cultural events don’t exist here—that’s just uncultured ignorance.

What We've Done Lately & What You Should Do Next

Choosing only one outstanding accomplishment for each year of the 1970's is difficult. So this brief chronology ignores scores of proud and significant achievements.

1979 Achieved the widest breadth, scope, and stability in history with over 1,500 varied programs in our backlog of more than \$4 billion.

1978 Pioneer orbiter relayed more information about Venus than had been learned by all prior means.

1977 Software-radar-data processing synthesis produced air defense ground environment (ADGE) system for Spain.

1976 Satellites crafted to meet special needs launched: Indonesia's Palapa, Comstars 1 & 2 for U.S., second Intelsat IV-A shared by many nations (communications); Marisat for maritime industry and navy.

1975 Multi-spectral scanner on NASA's Landsat 2 began monitoring earth's land and ocean resources.

1974 Westar satellites multiplied instantaneous exchange of multimedia data for government and business.

1973 Final sites for NATO alliance's

NADGE system extended electronic protection from Norway to Turkey.

1972 Intelsat IV satellites vastly expanded TV and telephone transmissions among user nations.

1971 Multiplexing system for passenger service and entertainment on jetliners went into operation, providing a technological base for future computerized management of large multi-building complexes.

1970 Forward-looking infrared radar (FLIR) synthesized two technologies and gave aircraft crews nighttime targeting capability.

It was 1968 when the fifth Hughes-developed Surveyor spacecraft soft-landed on the moon, two years after the first Surveyor made the first unmanned moon landing.

In 1963, the world's first synchronous-orbit spacecraft, Syncor, initiated the era of space communications.

Hughes Research Laboratories demonstrated the first working laser in 1960. The Company has been advancing laser technology throughout the two decades since.

**We're interested in you.
We'd like to meet you.**

This is what we offer:

The best of both: small-group chance to learn, contribute, get noticed, and advance...plus big company resources, diversity, benefits, and stability.

The *where* is important, too:

At Hughes, where electronics technology confronts the future. At Hughes, in the uniquely enjoyable climate of Southern California.

Let's talk about your specific training, aptitude, and interests—and specific places you could help in our continuing scientific progress.

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Facilities & Major Universities

Major Hughes facilities in Southern California. ■

- 1 Santa Barbara Research Center, Goleta
- 2 Spectrolab, Sylmar
- 3 Missile Systems, Canoga Park
- 4 Research Laboratories, Malibu
- 5 Corporate Offices and Electro-Optical & Data Systems, Culver City
- 6 Radar Systems and Support Systems, Los Angeles airport area
- 7 Space & Communications, El Segundo
- 8 Ground Systems, Fullerton
- 9 Industrial Electronics:
 - a Electron Dynamics, Torrance
 - b Solid State Products, Newport Beach
 - c Connecting Devices and Micro-electronic Systems, Irvine
 - d Industrial Products, Carlsbad

A ■ 1 Santa Barbara



Some major universities in Southern California. ■

- A University of California, Santa Barbara (Goleta)
- B California State University, Northridge
- C California Institute of Technology (Cal Tech)
- D California State Polytechnic University, Pomona
- E California State University, Los Angeles
- F University of California, Los Angeles (UCLA)
- G University of Southern California
- H Loyola Marymount University
- I Northrop University
- J California State University, Dominguez Hills
- K California State University, Fullerton
- L California State University, Long Beach
- M University of California, Irvine
- N University of California, San Diego (La Jolla)
- O California State University, San Diego

